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ABSTRACT

This paper helps all those concerned with keeping schools clean and properly maintained in adopting healthier cleaning and maintenance practices and promoting the purchase and use of environmentally preferable products which perform well and are cost effective. It explains how children are exposed to toxic chemicals in school cleaning and maintenance products, highlights the problem of indoor air pollution, and cautions about the lack of toxic testing on commercially used cleaning chemicals. A checklist for prevention of dirt and grime by anticipating people and their messes is detailed. Also discussed are tips on purchasing environmentally preferable cleaning products, including a checklist of human health and environmental considerations. Final sections cover vendor, price and performance considerations; and thoughts on how schools buy cleaning and maintenance products. Lists of helpful organizations and agencies and how-to guides are included. (GR)

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Healthier Cleaning & Maintenance: Practices and Products for Schools

Healthy Schools Network, Inc.

New York State Association for Superintendents of School Buildings and Grounds

1999

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EF 505 804

Healthy Schools Network, Inc.

New York State Association for Superintendents of School Buildings and Grounds

Healthier Cleaning & Maintenance: Practices and Products for Schools

Every child and school employee has a right to an environmentally safe and healthy learning environment which is clean and in good repair; schools should serve as role models for environmentally responsible behavior."

Guiding Principles of School Environmental Quality, adopted, NYS Board of Regents, December 1994

Regents' Advisory Committee on Environmental Quality Recommended Actions:
Schools should use materials and supplies which are less toxic and hazardous to building occupants.
Schools shall adopt guidelines to reduce exposure to chemical fragrances.

THE CLEANING & MAINTENANCE OF SCHOOLS IS TOUGHER THAN EVER: *More CHILDREN + More ACTIVITY + More HOURS = More DIRT & MESS!*

The number of children in classrooms, hallways, cafeterias, gymnasiums, locker rooms, and other areas makes schools huge cleaning and maintenance challenges.

Schools are four times as densely occupied as commercial office spaces; and children are not known for neatness. More children have asthma and allergies than ever before and constant foot traffic stirs up dust, tracks in mud and debris. Schools often schedule cleaning during after hours. Yet, some over-crowded schools have adopted split sessions, some provide breakfasts, after school programs, sports activities, and summer school sessions. Some school buildings and grounds have become "centers of community" and are used for evening and weekend programs. The bottom line: schools have more users, for more hours than ever before.

The combination of numerous occupants, lack of storage space for instructional materials or student projects, back-logged school building repairs, materials or furnishings that collect dirt or require special cleaning, and maintenance staff cut-backs can be overwhelming for facility directors and their staff. While it is their primary concern to keep school facilities clean, safe and healthy, they often cannot keep up. Further, the industrial strength cleaning products and room deodorizers some schools use actually add to indoor air pollution. These products can be risky to use around children--especially those with sensitive airways or other health problems--hazardous to the cleaning staff who handle them directly, or they can present schools with special handling and disposal costs. Cleaning is a low-cost health intervention strategy. While schools should be cleaned more frequently and more effectively, the cleaning itself should not contribute to the problem.

PARENTS:

When to Suspect an Environmental Problem in the School

- **Your child starts most days healthy but develops headaches or nausea during the school day**
- **Your child comes home from school sick, tired, 'itchy' or angry**
- **Your child uses more asthma medications on school days**
- **Your child shows new or worsening health or learning problems as the school year starts or only on certain days;**
- **Your child comes home with odd odors clinging to his/her clothing.**

You will not necessarily know if pesticide applications or renovation projects are taking place during school hours: you will need to ask.

Take these health signs seriously! School personnel and unions do.

SCHOOL OFFICIALS:

Chronic illnesses can make anyone miserable, but they also affect school attendance, performance, and life-long attitudes towards learning.

Take air quality complaints seriously! Cleaner indoor air quality benefits everyone.

The purpose of this Guide is to assist all members of the school community...parents, teachers, facility directors, staff, superintendents, business officials, and others...in working together to adopt healthier cleaning and maintenance practices, and to promote the purchase and use of environmentally preferable products which perform well and are cost effective.

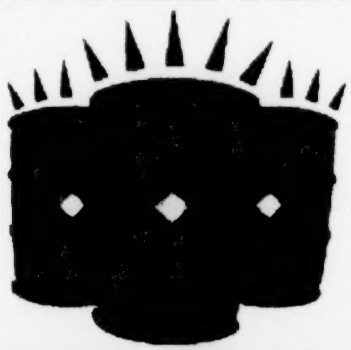
WHY? HAZARDOUS SUBSTANCES, CHILDREN AND THE ENVIRONMENT:

Children, Learning and Poisons Don't Mix

While no one in school should be exposed to dangerous chemicals, children are especially vulnerable to environmental health hazards. Children are required to be in school and they outnumber adults in buildings. Medical research shows that childrens' organ systems are still developing. They proportionally eat, drink, and breathe more per pound of body weight than adults, their behavior exposes them to more environmental threats, and they are least able to identify or protect themselves from hazards. As a direct result of polluted indoor air, children can develop respiratory ailments such as nasal congestion, shortness of breath, wheezing or worsening of asthma, nosebleeds, a cough, or other symptoms such as itchy, watery eyes, headaches or dizziness, fatigue, nausea, rashes, fever, muscle aches, and more.

HOW CHILDREN ARE EXPOSED TO TOXIC CHEMICALS IN SCHOOL CLEANING AND MAINTENANCE PRODUCTS

Whether a product is freshly applied or mis-applied during class, mixed improperly (some common cleaning products, when mixed together can give off deadly gas) or used in an undiluted state, stored in an unventilated hall closet, or leaves a heavy residue, there are three exposure routes. First, **inhalation**: (children breathe more air per pound of body weight than adults) aerosols, vapors, fumes, or dusts can be inhaled causing breathing problems, and/or absorbed into the bloodstream and carried to other body organs; second, **skin contact**: (children are less able to identify and avoid hazards, and have immature systems that may not detoxify poisons) residues from chemicals can damage skin resulting in dryness, redness, or dermatitis; by burning skin tissue; or absorbed through the skin and carried to body organs; and third, **ingestion**: (children play on the floor or ground, put their hands in their mouth, and rarely wash their hands before eating lunch or snacks) and can accidentally drink or eat chemicals via hand-to-mouth touch.



ABOUT THE ENVIRONMENT, INDOORS AND OUT

School facilities are daily role models for how we care for our built environment. Sadly, some 15,000 schools nationally and up to 40% of New York State's 4,200 schools have **polluted indoor air.** Cleaning and maintenance products that add to the pollution load aren't necessary; further, they contribute to a school's over-all risk management problems. The use of less-toxic products in schools is recommended by many as a zero-to-low cost way to protect indoor air quality (IAQ) in schools (US EPA *Tools for Schools*). In addition to creating indoor air quality pollution, hazardous chemicals often create pollution during their manufacture or disposal. Some pollute water and air, others must be disposed of as hazardous waste, or cause more harm when their containers are buried in landfills or burned in incinerators.

CHEMICALS USED TO CLEAN AND MAINTAIN SCHOOLS TODAY

Of the 80,000 chemicals in commercial use today only a small fraction have been individually tested for toxicity.

Tests on various chemicals acting in combination with one another is practically non-existent. Despite this, a wide variety of toxic or hazardous products are routinely used for cleaning homes and offices. Schools are no different, except the majority of school occupants are children, packed very closely together. Adult exposure limits are negotiated in a federal regulatory process which is focused only on adults. But new research on children and their vulnerability gives reason to doubt these exposure limits are actually protective of children.

Indoor air quality (IAQ), Sick Building Syndrome (SBS), and Building Related Illness (BRI). IAQ is not well-regulated and no standards are set for children.

For general information, call us for our Parent Guide to School IAQ. Sick Building Syndrome (SBS) is used to describe situations in which building occupants experience acute health effects that appear to be linked to time spent in a building, but no specific illness or cause can be identified. The complaints may be localized in a particular room or zone, or may be widespread throughout the building. In contrast, the term "building related illness" (BRI) is used when symptoms of diagnosable illness are identified and can be attributed directly to airborne building contaminants. (Source: EPA Indoor Air Facts, No 4, April 1991). The use of cleaning and maintenance products containing toxic chemicals has been directly linked to IAQ, SBS, and BRI.

TWO STEPS TO HEALTHIER SCHOOL HOUSEKEEPING

1. **PREVENT dirt and grime by anticipating people and their messes.**
2. **PURCHASE healthier, safer cleaning products that perform well and are cost effective.**

STEP 1.
PREVENT DIRT AND GRIME:

A CHECKLIST of basic, healthy PREVENTIVE MAINTENANCE PRACTICES to keep normal dirt and litter under control. Every school should use healthier prevention strategies that work for it locally. Find out what your school does, and send us your favorite prevention ideas.

- ❑ Keep walks and parking areas clean and shoveled so shoes stay clean and dry; avoid road salt.
- ❑ Place 2-3 'walk-off ' mats at each entrance (as wide as the doorway and twice as long, often 6 x12) and use trash cans at entrances to reduce soil, sand and salt, mud and litter in the halls.
- ❑ Provide student lockers or cubbies for storage of kids' personal items, and have regular locker clean-up days.
- ❑ Restrict all snacks, meals, and food storage to one or two designated areas in a building.
- ❑ Have easy to find, use, and tightly sealed garbage cans and recycling bins, away from the building's fresh air intakes; keep cans clean.
- ❑ Use only durable, hard surface, easy to clean materials for floors and walls.
- ❑ Ban new or used (donated) upholstered furniture and carpeting in classrooms & hallways.
- ❑ Promote regular hand-washing during the day for students and staff to limit the spread of germs.

- ❑ Ban the use of cleaning chemicals brought from home (example: teacher's own aerosol can of desk cleaner).
- ❑ Reduce paper and project clutter that collects dust and is hard to clean around (toss it out or get storage bins).
- ❑ Ban feathered or furry animals from classrooms such as birds or hamsters (aside from creating an extra mess and attracting insect pests, animals are not compelled to be in school but asthmatic, allergic kids are).
- ❑ Establish clear procedures in response to common spills.
- ❑ Maintain the heating and ventilating system to reduce or eliminate airborne contaminants such as bacteria and molds, or other problems such as dead animals in the duct work.
- ❑ Replace moldy ceiling tiles and most importantly, correct the cause of the water intrusion. Tear out old, moldy carpets.
- ❑ Make sure staff know how the air handling system works so vents are not blocked or room controls mis-set. *(If an outside energy company operates school's heating and ventilating system, put enforceable maintenance and air quality controls into the service contract: only building occupants will know when the building air is healthy, not the outside commercial contractor).*
- ❑ Use high-efficiency particulate air (HEPA) filters or microfiltration in vacuums or room air cleaners that can trap very small particles of dust, mold spores, or animal dander; and replace bags when they are half-full.
- ❑ Damp (not wet) mop or auto-scrub floors instead of dry-sweeping floors to keep dust down, and change the water frequently.

- ❑ School officials can educate building users about the new 'keep out the dirt/clean sweep' (pick a name) program and praise student neatness.
- ❑ Make elimination of graffiti a priority - get students involved.
- ❑ Make sure school staff and school officials know about common health and learning problems triggered by different kinds of indoor air pollutants.
- ❑ Have a written plan for school cleaning and maintenance that protects health and environment as top priorities.
- ❑ Establish an Environmental Health & Safety Committee on which parents, community, employees, and student representatives serve, and a system for dealing with questions or complaints.

1. **PREVENT dirt and grime by anticipating people and their messes.**
2. **PURCHASE healthier, safer cleaning products that perform well and are cost effective.**

STEP 2.

PURCHASE HEALTHIER PRODUCTS: "Environmentally Preferable Purchasing."

Environmentally preferable purchasing (EPP) takes prevention seriously. EPP means "products and services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. This comparison may consider raw material acquisition, production, manufacturing, packaging, distribution, re-use, operation, maintenance, or disposal of the product or service." (Presidential Executive Order 13101; definition also used by US EPA and generally accepted by industry).

CHECKLIST. HUMAN HEALTH AND ENVIRONMENTAL CONSIDERATIONS:

Use the checklist below to evaluate products before you buy. It was compiled from our research on state governments, cities, private sector companies, and not-for-profit organizations' product selection guidelines and rating systems. While no product is perfect and you will not likely find a product that meets ALL of the characteristics below, try to cover as many as possible.

- ❑ **AVOID HAZARDOUS INGREDIENTS.** Look for products that contain no Occupational Safety and Health Act (OSHA) defined hazardous ingredients, and that do not contain chemicals that must be reported under Superfund Amendments and Reauthorization Act (SARA), Title III, Section 313. These represent some of the most acutely toxic chemicals used in cleaning products. **Both OSHA and SARA information can be found on 1) the MATERIAL SAFETY DATA SHEET (MSDS) under the section on "hazardous ingredients," and 2) on PRODUCT LABELS:**

1) **Material Safety Data Sheets (MSDSs).** MSDSs are the manufacturer's summary of the potential hazards of a product. MSDSs are the most reliable existing source of guidance for choosing less toxic cleaning products. They include information on health effects, safe use, handling and storage, and emergency procedures to follow in the event of a spill or leak. Manufacturers are required by the Occupational Safety and Health Act to create and distribute MSDSs for products that may present an occupational hazard. Nonetheless, because the rules are weak, many MSDSs lack information; others are excellent. Employees will be familiar with MSDSs. Parents can ask to review them or get copies to learn more about hazardous products at school. Since one of the purposes the MSDS is to deal with emergencies, they must be accessible. If you are refused, you may use the New York Freedom of Information Law (FOIL) to obtain copies.

Health Hazard Ratings on MSDSs. Each MSDS should contain a "Health Hazard Rating" number. 0=insignificant; 1=slight; 2=moderate; 3=high; and 4=extreme. It is best to choose products with the lowest rating; 0s and 1s are, of course, preferable.

2) **Product Labels.** OSHA also requires that warning labels be placed on containers of hazardous materials in the workplace. Labels must provide names of chemicals in the product and the physical and health hazards. This can be given in words, symbols or pictures. Since federal agencies have not agreed upon standard language, product labels will vary. **Some products use "signal words" such as CAUTION=mild/moderate hazard; WARNING=moderate hazard; DANGER=very flammable/corrosive, highly toxic; POISON=highly toxic.** Others may identify health targets. Choose products that have the lowest hazard potential, and are not known, probable or possible carcinogens, or do not affect the nervous system, reproductive organs, lungs, liver, or kidneys.

WATCH OUT for specific chemicals used in cleaning and maintenance products:

When choosing **MAINTENANCE PRODUCTS** such as **interior paint**, use water-based latex paints that: 1) contain no solvents, and avoid solvents for thinning and clean-up; and 2) have low or zero volatile organic compounds (VOCs), and contain no heavy metals or other ingredients that are harmful to human health or the environment. Ingredients to avoid in paints: lead, mercury, antimony, cadmium hexavalent chromium, methylene chloride, 1,1,1-trichloroethane, benzene, toluene, ethylbenzene, vinyl chloride, napthalene, 1,2-dichlorobenzene, Di(2-ethylhexyl) phthalate, butyl benzyl phthalate, di-n-butyl phthalate, di-n-octyl phthalate, diethyl phthalate, dimethyl phthalate, isophorone, formaldehyde, methyl ethyl keytone, methyl isobutyl keytone, acrolein, and acronitrile. (**Green Seal**, *Choose*

Green Report, See **Resources**, page 7). For other maintenance products such as **floor wax, stripper, gym floor finish**, use water-based, solvent-free, non-heavy metal finishes and coatings with low-or no VOCs. Avoid: kerosene, methylene chloride, mineral spirits, naptha, stoddard solvent, petroleum distillates, toluene, xylene and any of the others mentioned above in regard to paints.

The list of hazardous chemicals which may be in the wide variety of specialized cleaning products (**general purpose, floor, toiler bowl, disinfectant, glass, etc.**) is too numerous to include in this Guide. Therefore when choosing **CLEANING PRODUCTS**, see a **NEW RESOURCE** on the Internet called the ***Janitorial Products Pollution Prevention Project***. (See **Resources**, page 7). **From this Website you can download factsheets listing specific chemicals to use and avoid in cleaning products and why; including information on the safe & effective use of chemicals in a wide range of custodial settings.** (*If you do not have access to the Internet, call Healthy Schools Network).*

NOTE: *It is important to remember that the hazardous nature of ingredients is highly dependent upon concentration. Many products such as all-purpose cleaners can be diluted to a point where the hazardous nature of a cleaning solution is negligible. Be cautious. Make sure the vendor can assure you that the dilution of the product ingredient still meets the criteria in this checklist, especially with regard to carcinogens, pH, irritation, VOCs, etc.* (See the continued checklist on "Other Specific Product Considerations" below for more information on these items).

OTHER SPECIFIC PRODUCT CONSIDERATIONS:

HUMAN HEALTH. Choose products that:

- ❑ **Contain no known, probable, or possible carcinogens.**
- ❑ **Have neutral pH.** High pH=caustics; Low pH=Acids. Choose products with moderate pH (7).
- ❑ **Are non-irritating to eyes & skin.** If irritation information is not available, go back to neutral pH.
- ❑ **Have no short-term (acute) or long-term (chronic) health hazards.** Check the MSDS and product label.
- ❑ **Are free of or are low in Volatile Organic Compounds (VOCs).** VOCs are organic chemicals (a class of chemical compounds) that evaporate easily. They contribute to indoor air pollution and may cause headaches, nausea, and respiratory problems and can cause the formation of ground level ozone/smog.
- ❑ **Use minimal disinfectants.** Disinfectants are toxic pesticides designed to kill living organisms. They are rarely required. For more information, see the *Janitorial Products Pollution Prevention Project, **Safe & Effective Disinfecting Factsheet,*** (See **Resources**) or call Healthy Schools Network.
- ❑ **Avoid fragrances (odors) and dyes.** While some custodial products are color-coded with dyes or scented to help building cleaners identify them quickly, product identification can also be achieved with a clear labeling system.
- ❑ **Are non flammable.** Should not be flammable or combustible. Avoid products with a flash point below 140 degrees Fahrenheit.
- ❑ **Are non reactive.** Mixing should not create toxic gases, fire, or other violent reactions.
- ❑ **Are not packaged in aerosol/spray cans.** Instead of pressurized propellants, use pump-action dispensers.
- ❑ **Provide dispensing systems that minimize exposure to concentrated solutions.** Dispensing method should be designed to eliminate exposure to the concentrated solution and reduce waste.

ENVIRONMENT. Choose products that:

- ❑ Are **readily biodegradable.**
- ❑ Contain **no ozone depleting chemicals** such as chlorofluorocarbons (CFCs) and chlorinated solvents. (These contribute to global warming.)
- ❑ Do not have to be **disposed of as hazardous waste.**
- ❑ Can be used for **more than one task (multi-purpose cleaners) to reduce waste containers and the need for use and storage of several products**. Choose packaging and delivery schedules that fit the school's supply storage. Buy only what you need.
- ❑ Are made from or contain **ingredients from renewable resources** such as corn (corn starch), coconut oils, and orange peels.
- ❑ Are **concentrated and work effectively in cold water to reduce energy consumption.**
- ❑ Are sold with **reduced packaging** both for the product and shipping container.
- ❑ Are packaged in a **refillable or recyclable** HPDE or PET container. (Make sure the product meets school's recycling system requirements).

CAVEAT EMPTOR (LET THE BUYER BEWARE)

Many manufacturers and retailers are starting to use terms such as "environmentally safe", "green", "non-toxic", or similar phrases to help sales. Some of these claims are valid and others are questionable.

Ask vendors to back-up their claims with written facts about their products.

BACKGROUND INFORMATION ON PURCHASING

VENDOR, PRICE & PERFORMANCE CONSIDERATIONS:

Vendor reliability. Training is critical. Will the seller demonstrate products or offer staff training, (and have sufficient staff to meet training requirements); supply MSDS's with bid and with delivery; deliver on time; give a telephone number for technical assistance?

Price. Be careful: price should mean the whole cost of the product from delivery, to storage, to disposal, not just the up-front purchase cost. While in the past "environmentally preferable products" were more expensive, today these products are often "cost-neutral", and in combination with a 'prevent dirt' approach, they are of comparable or even lower prices than their more-toxic competitors. Schools, by the way, are willing to spend money on things they believe are important, say, an expensive basketball court finish.

Performance. Does it actually clean up spills or heel marks? Is easy to use? Does it affect the user's health or add to indoor air pollution? Schools expect too much from products and cleaners if they haven't already taken steps to prevent dirt and control messes. Ask the outside rating organizations (See Resources) that test for health and environmental attributes, and performance. If facility directors and staff are not satisfied with a product, check to make sure it is being mixed and applied properly. Environmentally preferable maintenance products are a growing industry: keep an eye out for new products that fit your needs.

GENERAL SAFETY TIPS

Be an alert consumer

- Read product labels.
- Ask vendors to prove their claims in writing. Check with other schools.
- Store products in ventilated areas.
- Remember, keep out the dirt, then use low-toxicity products according to directions: proper dilution, good ventilation, the use of protective equipment, etc. Gloves and/or masks are often suggested for use with any cleaning product. Products that require special respiratory protection should be avoided.

It is essential that directions for proper use and safety of a product be followed.

HOW SCHOOLS BUY CLEANING AND MAINTENANCE PRODUCTS

New York State public school purchasing is regulated by state law and local school board policy. (If you are an out of state reader, check with your School District Superintendent, Facility Director, State Education Department, or State Comptroller's Office for local information, or call us). Purchase contracts over $10,000.00 must be competitively bid. Districts specify product characteristics, then choose the lowest responsible bidder that meets those "specifications." School Facility Directors need reliable products. Poor performing products or hard to use products can create hidden costs in labor, handling, air pollution, or disposal. Thus, many experienced Facility Directors ask for product demonstrations and Material Safety Data Sheets to accompany every bid and product delivery. School boards designate a staff purchasing agent who may keep bidders' lists, circulate requests for proposals, buy locally, or buy from state contract. Product "specs" can include chemical composition. Schools purchase year-round, but usually stock up just before vacations when heavier cleaning and repairs take place. Check with your Facility Director or look in your school board policy manual for the district's purchasing policy. Make sure that health and environment criteria are part of the school board purchasing policy and actual specifications.

DISCLAIMER

Healthy Schools Network, Inc, and NYS SBGA do not believe that if a chemical product is used a child or adult person exposed will automatically become ill or develop long-term disabilities. Neither organization endorses any product brand or manufacturer. We do, however, endorse a precautionary principle ("better safe than sorry"): first, there is evidence that pollutants are linked to learning disabilities, autism, attention deficit disorder and hyperactivity, cancers, asthma, violence and aggression, and other chronic and costly problems whose rates are on the increase; second, a wide array of new cleaning products are available, and can avoid polluting the indoor and outdoor environment, perform well, and are cost-effective.

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RESOURCES: WHERE TO GO FOR MORE INFORMATION

Products & Vendors:

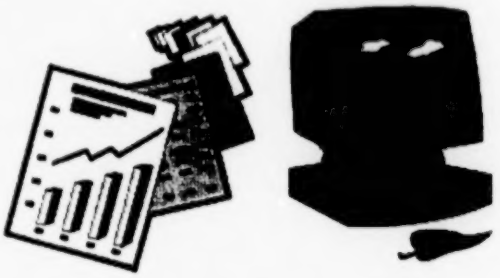
- **Starter Package.** Includes companies and products that have been evaluated by independent third-party agencies and organizations. Includes selection criteria. Information available on all types of **cleaners, paints, waxes, strippers, finishes, and more.** Call the Healthy Schools Network at (518) 462-0632. **HSN and SBGA do not endorse any product or manufacturer. It is recommended that you use the checklist in this Guide to conduct your own evaluation of any company or product you are considering for use around children and school personnel.**

Organizations and Agencies:

- **National Association of Counties (NACo),** 440 First Street, NW, Washington, D.C., (202) 393-6226, www.naco.org/programs/environ/purchase.cfm. Environmental Purchasing Campaign is designed to help US counties purchase safer products. **Website has links to each of the sites listed below:** Click on "Resources."
- **King County (Washington)** EPP Program, King County Procurement Services Division, 500 4th Ave., Room 620, Seattle, WA. 98104, (206) 296-4210, see www.metrokc.gov/procure/green/index.htm. (Go to Procurement Bulletins, APP Materials/Janitorial which lists EPP Resources (also contains each of the websites listed here), on **cleaning products.** See also, http:www.metrokc.gov/hazwaste/house/paintchoose.html for the **Paint Smart!** site.
- **City of Santa Monica** Sustainable City Purchasing Program, Environmental Programs Division, 200 Santa Monica Pier, Santa Monica, CA. 90401, www.ci.santa-monica.ca.us/environment/policy/purchasing. Go to "Custodial Product Bid Specifications" **for guidance on EPP and how to include product characteristics in bid specs.**
- **Green Seal,** 1730 Rhode Island Ave., N.W., Suite 1050, Washington, D.C., 20036-3101, (202) 331-7337 website: www.greenseal.org. Choose Green Reports: *General Purpose Cleaners, March 1998; and Architectural Paints,* August-Sept., 1998. **Lists of companies & products in the categories of cleaners and interior/exterior paints.**
- **State of Massachusetts,** Operational Services Division, One Ashburton Place, Room 1017, Boston, MA 02108-1552, (617) 727-3351, e-mail: eric.friedman@state.ma.us; Website: www.magnet.state.ma.us/osd/enviro/enviro.htm. Go to Product Information & Contracts (Statewide Contract); OSD Update; scroll to Awarded Contractors & Products for names of companies and products evaluated and selected for government purchasing of environmentally preferable products. Includes companies, product evaluations, and prices on **cleaners (all-purpose, floor, carpet/upholstery, glass, stainless steel, bathroom tub/tile, urinal/toilet bowl) degreasers, & disinfectants.**
- **State of Minnesota,** Office of Environmental Assistance, 520 Lafayette Road, 2nd Floor, St. Paul, MN, (800) 657-3843, kelly.luck@moea.state.mn.us. Website: www.moea.state.mn.us. Click on Local Government Assistance; Environmental Purchasing; Cleaning Supplies, which will bring you to Procuring & Evaluating Green Cleaners, and Choosing Environmentally Preferable Cleaners. Information resource only. Does not contain companies or products.
- **USEPA Environmentally Preferable Purchasing Program,** 401 M Street, SW (7409), Washington, D.C. 20460, website: www.epa.gov/opptintr/epp Click on the following series: How to "Do" EPP; Purchaser; Purchaser's Toolbox; Cleaning Products Pilot Project; Purchasing Decision Wizards; CPPP Environmental Attributes Matrix. Provides a ranking of cleaners/degreasers. Contact: Eun-Sook Goidel, EPP Program, USEPA, goidel.eunsook@epamail.epa.gov.

How-to Guides:

- ***Blueprint for a Green School,*** Jayni Chase. Chapter 14 focuses specifically on **cleaning products**. Contact: Center for Environmental Education, Antioch New England Graduate School, 40 Avon Street, Keene, NH, 03431-3516, (603)355-3251, $26. Website: http://www.cee-ane.org.
- ***Clean & Green, The Complete Guide to Nontoxic and Environmentally Safe Housekeeping,*** Annie Berthold-Bond (Ceres Press, PO Box 87, Woodstock, NY, 1990, $8.95). Safe housekeeping for schools as well. Complete guide for info on alternative products in all cleaning categories, includes recommended companies. Available in most bookstores or see, www.betterbasics.com.
- ***Guidelines for Green Housekeeping & Maintenance,*** Stephen P. Ashkin, for the City of Austin, Texas, Sustainable Building Guidelines, Vol. III, February, 1998. Comprehensive checklists for healthier buildings for use by facility directors & custodial staff. Contact: Stephen P. Ashkin, Seventh Generation, Inc., 1 Mill St., Burlington, VT., 05401-1530, (802) 658-3773, ext. 785, e-mail:spa@seventhgen.com
- ***Healthy Schools Handbook,*** National Education Association. See Chapter 7, "Integrated Cleaning Management" by Annie Berthold-Bond. Contact NEA Professional Library, P.O. Box 2035, Annapolis Junction, MD. 20701-2035, (800)229-4200. $24.95 for non-members.
- ***Toxic Turnaround, A Step-by-Step Guide to Reducing Pollution for Local Governments,*** See Chapter 8, "Cleaners: Hazards & Alternatives." Contact: Environmental Health Coalition, 1717 Kettner Blvd., #100, San Diego CA. 92101, Phone: (619)235-0281, e-mail: ehcoaltion@igc.apc.org, website: www.environmentalhealth.org.



Information on Health Effects of Chemicals in Custodial Products and Preventive Practices:

- ***Health Hazards Manual for Custodians, Janitors, and Housekeepers***, Nellie J. Brown, M.S. Resource on health effects of chemicals in custodial products and how to prevent exposures. Contact: Cornell University, Workplace Health and Safety Program, 237 Main Street, Suite 1200, Buffalo, New York, 14203, (716) 852-4191. $5.
- ***Janitorial Products Pollution Prevention Project,*** sponsored by USEPA Region 9. Authors: Thomas Barron, Carol Berg, & Linda Bookman. http://www.westp2net.org/Janitorial/jp4.htm. Contains user-friendly fact sheets on safe & effective use of floor finishes & strippers; restroom, carpet, toilet, glass & metal cleaning; disinfecting, deodorizing, and more. Also lists of chemicals in custodial products to avoid and why.
- ***New Jersey Hazardous Substance Fact Sheets (NJHSFS)*** list health effects, safety precautions, and emergency response on over 1,000 chemicals. Available in Spanish. Contact: New Jersey Department of Health & Senior Services, Right-to-Know Program, PO Box 368, Trenton, NJ 08625-0368, (609) 984-2202. Website: www.state.nj.us/health/eoh/.

'ENVIRONMENTALLY PREFERABLE PURCHASING' SUCCESS STORIES

City of Santa Monica:
One component of the City's toxics use reduction program which began in 1993, was designed to evaluate and adopt less- or non-toxic custodial products for use by City custodians. Results: 1) replacement of toxic products with less or non-toxic alternatives in 15 of 17 cleaning product categories; 2) the elimination of 3200 pounds of hazardous materials in products purchased annually; 3) a cost savings of about 5% resulting from the purchase of more concentrated products with less packaging/shipping costs, lower cost per application, and less wasteful use of products due to improved custodial training; 4) a proven set of product specifications (for bidding); and 5) increased morale of custodians who recognize the City's concern for their health and who appreciate the opportunity to participate in decisions made about their work. Source: City of Santa Monica, Environmental Programs Division Website, *Purchasing Policies: Janitorial Products Purchasing Criteria.* See the Resources section in this Guide.

Brooklyn Public Library 'Green Housekeeping' Pilot Project:
As a result of their 'green housekeeping project,' the Brooklyn Public Library reduced over 16 hazardous substances from its cleaning operations; reduced by approximately 50% the cleaning product used; improved efficiency of cleaning; and created a Green Team composed of departmental and custodial staff that worked together to improve the Library's purchasing and waste disposal procedures. The project improved custodial staff training, and gave the entire library staff the opportunity to participate in positive change. Source: Brooklyn Public Library *Green Housekeeping Pilot Project,* Department of Design & Construction, City of New York, February, 1999.

The Healthy Schools Network is a non-profit organization dedicated to the protection of child and adult environmental health in schools and the creation of local school role models of environmentally responsible behavior.
96 South Swan Street, Albany, NY 12210, (518) 462-0632, e-mail: healthyschools@compuserve.com, website: www.hsnet.org

New York State Association For Superintendents of School Buildings and Grounds

The mission of the **New York State Association for Superintendents of School Buildings and Grounds (SBGA)** is: "To be leaders in maintaining the highest standards of a safe, healthy learning environment. To support educational excellence through the prudent management of resources."

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